

Conference Reports: 8th LCA Case Studies Symposium

Increasing Credibility of LCA

Brussels, November 30, 2000

As in the past years, the SETAC Europe Case Study Symposium was held in Brussels. 83 participants from industry, academia, and consultancy took part in this traditional event. Participants came mainly from Europe, but there were also experts from Japan, South-Korea, South Africa, and the United States. This year, the conference, with the overall theme 'Increasing Credibility of LCA', focused on the issues of uncertainty and data quality, targeting LCA for decision making, and critical reviews. The concept of the symposium, which was chaired by B. Weidema, was changed compared to the previous years. It was not structured as a conventional platform conference, but more as a discussion forum. Selected oral presentations were short, leaving much time for comprehensive discussions. Especially the concept of extensive discussions with the speakers and the audience, as initiated by appointed opponents, was perceived as a very creative and substantial form of presenting and exchanging new ideas and opinions. The poster session was also enhanced by summaries between platform presentations.

The symposium started with the session on **uncertainty and data quality**, where both industrial practices of data collection and data quality management, and new approaches to dealing with data uncertainty, were presented. This included practiced methods for sampling branch specific data and data quality management procedures (B. Maurice, Electricité de France). It was concluded that a thorough assessment and documentation of the quality of the LCI is not feasible, but that one should focus on the weak points and subsequently those data that have an important influence on the cumulative results. M. Buridard (International Iron & Steel Industry) stressed that the involvement of industry experts in the sampling process, as well as in the appropriate usage of the data, is of essential importance. The steel industry has set up a network of national LCA experts who support practitioners in using their database. Interesting was also the presentation of differences, for example, in country specific emission data (for the same product). These are not only caused by different plants, different raw materials, or process technologies, but also to a high degree by the local infrastructure. For instance, there is a significant difference in SO_x emissions from plants for the production of steel bars from the electric arc furnace route in Far East Asia and Western Europe, which is caused mainly by the differences in the production of grid electricity.

Other presentations dealt with modular documentation of LCI data sets in order to decrease the uncertainty in choosing a data set from a database as a representative for a specific 'real-life' process (B. von Bahr, CPM). A specific approach, for example, is to report emissions based on governing parameters such as raw materials, specific technology, and pollution control equipment. With such a format, the LCI practitioner can choose the appropriate combination of parameters resulting in the emission data. Another presentation intro-

duced the concept of a virtual case study, which makes it possible to determine the uncertainty introduced by errors in the data (A. Ciroth, TU Berlin). The advantage of the model compared to a case study with 'real-life' data is that real values and errors can be differentiated, and thus, the affect of controlled errors can be studied. Testing different errors with this virtual case study showed that errors in data for material and energy flows connecting processes within the product system model have much higher impacts on the results of the LCA than errors in the data for elementary flows. Also discussed was input/output LCA for determining the uncertainties in LCIA caused by geographic variances (G. Norris, Harvard University). It was shown that uncertainty reductions are possible by using region-specific characterization factors.

In the following discussion, the opponents (R. Bretz, M. Baitz) started a heated debate over the presented and connected issues regarding uncertainty and data quality. The outcome of this discussion was that one first has to identify the critical uncertainties (data as well as model uncertainties) and that the subsequent effort for reducing uncertainty should focus on the most relevant issues (but stopping at the level of irreducible uncertainties).

The second session **targeting LCA for decision-making** dealt with the application of LCA results to actual business decisions. A. L. Duncan (SmithKline Beechum) stressed that LCA, as a tool for complex interactive environmental issues, is very valuable for industry, but that the LCA practitioner must not neglect the format of presenting LCA results. The presentation of results has to be adapted to the specific group of decision-makers also using the 'right' vocabulary. Also, with the use of existing LCA results as a guideline to aid in decision-making, it is much easier to gain acceptance than by performing detailed studies for a few selected products. In a study of three different in-transit-refrigeration technologies for food products, the LCA results depended on the type of food to be transported (M. J. Bennett, The BOC Group). Different technologies, for example, seem to be most environmentally friendly for frozen compared to chilled distribution. However, the presenter emphasized that, in order to facilitate the decision-making process, economic considerations as well as relevant social aspects (here: noise) have to be presented together with the LCA results in order to incorporate the interests of the various stakeholders (e.g. the buying public, fleet managers, local authorities). P. Saling (BASF) presented their in-house eco-efficiency portfolio as a tool for the detection of economic and environmental opportunities and risks in present and future business activities. With this portfolio, the results of complex studies can be communicated in a very simple way. Additionally, the results of different scenarios can be illustrated quite efficiently. Another presentation (P. C. Ross, Dutch Ministry of Housing, Spatial Planning and the Environment) focused on LCA for policy decisions in waste